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+ SAVE FARM GRAIN BY FUMIGATION X

UNITED STATES DEPARTMENT OF AGRICULTURE  
Office of Information

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(Supplement to Farm Mobilization Fact Sheet No. 1--Grain Conservation and Storage. Information supplied by Bureau of Entomology and Plant Quarantine, Agricultural Research Administration.)

The smallest, most quiet, and most determined thieves that enter your grain bins are INSECTS.

Insects living in farm grain bins eat or destroy 5 percent or more of our Nation's stored grains and cereal products every year. They cause an annual estimated loss of at least 300 million bushels of grain. That terrific loss is being carried principally by you farmers.

You don't need to share in that loss. Instead, you have an opportunity to make some easy money at home by preventing insect damage in your stored grain. A relatively small expenditure of time and money will bring dollar rewards.

Insects damaging your stored grain can be killed, by you.

The way to do it is through FUMIGATION.

Step No. 1 -- Fumigate

Fumigate small grains and shelled corn as soon as possible after they are binned. In the South, field infestation of corn necessitates prompt drying and shelling after harvest, followed by fumigation.

The two fumigants most commonly used for killing insects in grain are mixtures of carbon tetrachloride with either carbon bisulphide or ethylene dichloride. You will find both of these fumigants ready mixed for sale under various trade names. They will not damage your grain for use as food, feed, or seed, if used as directed.

These fumigants are liquids. Spray them evenly over the surface of the grain. They evaporate quickly and the heavy vapors sink down through the grain, killing the insects as they go.

A bin must be tight for best results. Otherwise the vapors will escape through the cracks and more fumigant must be used to make up for the loss. Tack laths or strips of heavy paper over the cracks. Fumigate on a day with little wind. The grain surface should be level and at least 6 inches below the top of the side walls.

Use a bucket or garden sprayer to spray the fumigant over the surface of the grain. The hole in the nozzle disc should be the size of a 10-penny nail.

Dosages of fumigants for each 1,000 bushels of grain stored in wooden bins are as follows:

Fumigant	:Small grains :	: Sorghum	
	:except sorghum: Corn :	grain	
	<u>Gallons</u>	<u>Gallons</u>	<u>Gallons</u>
Carbon tetrachloride 4 parts, carbon bisulphide 1 part	3	6	8
Carbon tetrachloride 1 part, ethylene dichloride 3 parts	6	6	10

In steel bins dosages may be reduced by one-half for small grains and by one-fifth for corn and sorghum grain.

Warning: Don't inhale the fumes. Wear a gas mask approved by the United States Bureau of Mines for protection against these fumigants if you are to be exposed to either of them for more than a very brief period. Remove at once any clothing wet with the fumigant and wash the skin with soap and water.

### Step No. 2 -- Investigate

Step No. 2 is, look into your bin conditions carefully. Look for warm spots where insects may be breeding. Look for webbed or caked areas. Caked areas should be broken up with a garden rake or similar implement before applying fumigant. Look for small worms, beetles, and moths and for kernels that seem to be "chewed" or have small holes in them.

If insects are working on your stored grain, you'll need to do something about them right away.

Farm-stored grain already in bins will stay there until sold or used. Insects are busy wherever and whenever there is mild weather. This is particularly true if the grain has a moisture content of more than 11.5 percent, or if it is not very clean, or if the bin was not cleaned thoroughly before putting the grain in it.



A Year-Round Program

Build bins tight, to make fumigation easier.

Thoroughly clean your empty bins before refilling them with new grain.

Clean up trash or old grain from outside your bins, also.

Don't keep bran, shorts, and other milled feed or empty feed bags near your stored grains. They often contain insects brought in from the mill.

Before you refill your empty storage bins, spray the floors and inside walls with an emulsion or water suspension containing 2.5 percent by weight of DDT, TDE, methoxychlor or chlordane, or an emulsion containing 1 percent by weight of piperonyl butoxide and 0.1 percent pyrethrins, at the rate of 2 gallons per 1,000 square feet. A garden sprayer can be used. Apply enough spray to wet the walls without run-off.

Have your grain as dry as possible when you store it.

Have your grain as free as possible from broken kernels and dirt.

Fumigate all grain as soon after harvest as possible.

Inspect your stored grain at least once a month. If living weevils are found, fumigate immediately.

